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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FULBRIGHT & JAWORSKI L.L.P 2200 ROSS AVENUE SUITE 2800 DALLAS, TX 75201-2784				MATTIS, JASON E
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/010,935	PRAGER ET AL.	
	Examiner	Art Unit	
	JASON E. MATTIS	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 April 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4,6-34,36-47,62 and 63 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-4,6-34,36-47,62 and 63 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 4/15/08. Claims 1-4, 6-34, 36-47, 62, and 63 are currently pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6, 10, 33, 36, 38, 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Daniel et al. (U.S. Pat. 5802177).

With respect to claim 1, Daniel et al. discloses a wireless communication system (**See the abstract of Daniel et al. for reference to a radio telecommunication system**). Daniel et al. also discloses a first subscriber subsystem disposed at a subscriber location having a first data interface compatible with a first general purpose protocol and a first digital interface compatible with a protocol other than the first general purpose protocol (**See the abstract, column 3 line 48 to column 4 line 3, and Figure 1 of Daniel et al. for reference to ITS 13, which is a first**

subscriber subsystem located within a subscriber's premises, having a subscriber interface 16, which is compatible with a first general purpose protocol interface, and a serial interface 18, which is a first digital interface compatible with a different protocol). Daniel et al. further discloses a second subscriber subsystem disposed at a subscriber location having a second subscriber data interface compatible with a wireless protocol and a second digital interface coupled to the first digital interface to provide communication between the first subscriber data interface and the second subscriber data interface (**See column 4 lines 9-16 and Figure 1 of Daniel et al. for reference to STRU 14, which is a second subscriber subsystem located on the outside of a subscriber's premises, having a radio transceiver 23, which is a second subscriber data interface compatible with a wireless CDMA communication protocol, and serial interface 21, which is a second digital interface coupled to serial interface 18 to provide communication between the ITS 13 and STRU 14).** Daniel et al. also discloses that the first subsystem comprises an indoor unit subsystem and the second subsystem comprises an outdoor unit subsystem (**See the abstract and column 3 lines 48-52 of Daniel et al. for reference to the ITS 13 being an indoor unit and the STRU 14 being an outdoor unit).**

With respect to claims 2 and 38, Daniel et al. discloses using ISDN (**See column 3 lines 53-62 and Figure 1 of Daniel et al. for reference to the subscriber interface 16 including an interface for ISDN).**

With respect to claim 6, Daniel et al. discloses that the first subscriber subsystem provides only digital processing of the subscriber data (**See column 3 line**

48 to column 4 line 3 and Figure 1 of Daniel et al. for reference to ITS 13 providing only digital call processing and speech transcoding/encryption on data before it is sent digitally through serial interface 18).

With respect to claim 10, Daniel et al. discloses that the second subscriber subsystem provides all analog processing of the subscriber data provided by the system (See column 4 lines 9-16 and Figure 1 of Daniel et al. for reference to STRU 14 providing all analog radio signal processing by receiving digital data through serial interface 21, and converting the digital data into an radio frequency signal using CDMA modem 22 and radio transceiver 23).

With respect to claim 33, Daniel et al. discloses a method for providing wireless subscriber digital signal processing (See the abstract of Daniel et al. for reference to a radio telecommunication method providing subscriber signal processing).

Daniel et al. also discloses providing a first signal processing subsystem at a subscriber location providing only digital signal processing with respect to the subscriber data signal (See column 3 line 48 to column 4 line 3 and Figure 1 of Daniel et al. for reference to ITS 13, which is a first signal processing subsystem, providing only digital call processing and speech transcoding/encryption on data before it is sent digitally through serial interface 18). Daniel et al. further discloses providing a second signal processing subscriber subsystem at a subscriber location providing analog and digital signal processing with respect to the subscriber data signal (See column 4 lines 9-16 and Figure 1 of Daniel et al. for reference to STRU 14, which is a second signal processing subsystem, providing digital processing as well as

analog radio signal processing by receiving digital data through serial interface 21, and converting the digital data into an radio frequency signal using CDMA modem 22 and radio transceiver 23. Daniel et al. also discloses coupling the first and second subsystems using a digital link (**See column 4 lines 1-16 and Figure 1 of Daniel et al. for reference to the ITS 13 and STRU 14 being coupled via serial link 15, which is a digital link, between serial interfaces 18 and 21**). Daniel et al. further discloses that the first subsystem comprises an indoor unit subsystem and the second subsystem comprises an outdoor unit subsystem (**See the abstract and column 3 lines 48-52 of Daniel et al. for reference to the ITS 13 being an indoor unit and the STRU 14 being an outdoor unit**).

With respect to claim 36, Daniel et al. discloses coupling the first subsystem to a subscriber data backbone (**See column 3 lines 53-62 and Figure 1 of Daniel et al. for reference to coupling the ITS 13 to an ISDN service of a subscriber, which is a subscriber backbone link**).

With respect to claim 42, Daniel et al. discloses coupling the second subsystem to a wireless subscriber data communication channel (**See column 4 lines 9-16 and Figure 1 of Daniel for reference to coupling the STRU 14 to a CDMA radio communication channel using CDMA modem 22 and radio transceiver 23**).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Eyuboglu et al. (U.S. Publication US 2002/0196749 A1).

With respect to claims 3 and 39, Daniel et al. does not disclose using Ethernet protocol.

With respect to claims 3 and 39, Eyuboglu et al., in the field of communications, discloses using Ethernet protocol (**See page 1 paragraph 5 of Eyuboglu et al. for reference to using Ethernet protocol in a backhaul connection to another network**). Using Ethernet protocol has the advantage of allowing the users of the wireless network to communicate with users of an Ethernet network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Eyuboglu et al., to combine using Ethernet, as suggested by Eyuboglu et al., with the system and method of Daniel et al., with the motivation being to allow the users of the wireless network to communicate with users of an Ethernet network.

6. Claims 4 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Marin et al. (U.S. Publication US 2002/0174441 A1).

With respect to claims 4 and 40, Daniel et al. does not disclose using SONET protocol, which is a synchronous signal protocol.

With respect to claims 4 and 40, Marin et al. discloses using SONET protocol (See page 2 paragraph 25 and Figure 2 of Marin et al. for reference to using SONET protocol in a backhaul connection). Using SONET protocol has the advantage of allowing the users of the wireless network to communicate with users of a SONET network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Marin et al., to combine using SONET protocol, as suggested by Marin et al., with the system and method of Daniel et al., with the motivation being to allow the users of the wireless network to communicate with users of a SONET network.

7. Claims 7, 8, 62, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Dapper et al. (U.S. Pat. 6275990 B1).

With respect to claims 7, 8, 62, and 63, Daniel et al. does not disclose using an OFDM digital modem and a digital multiplexer to process signals.

With respect to claims 7, 8, 62, and 63, Dapper et al., in the field of communications, discloses using an OFDM digital modem and a digital multiplexer to process signals (See column 78 line 51 to column 80 line 10 and Figure 37 of

Dapper et al. for reference to using a digital OFDM modem and a digital multiplexer to process signals). Using an OFDM digital modem and a digital multiplexer to process signals has the advantage of allowing a system to process and route OFDM signals on multiple channels such that bandwidth is used more efficiently.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Dapper et al., to combine using an OFDM digital modem and a digital multiplexer to process signals, as suggested by Dapper et al., with the system and method of Daniel et al., with the motivation being to allow a system to process and route OFDM signals on multiple channels such that bandwidth is used more efficiently.

8. Claims 9, 14, 34, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Zendle (U.S. Pat. 6865170 B1).

With respect to claims 9 and 14, Daniel et al. does not specifically disclose the first and second digital interfaces being fiber optic interfaces.

With respect to claims 34 and 45, Daniel et al. does not specifically disclose the digital links between subsystems comprising fiber optic links.

With respect to claims 9, 14, 34, and 45, Zendle, in the field of communications, discloses using fiber optic interfaces and fiber optic links to couple subscriber subsystems (**See column 10 lines 10-41 and Figure 8 of Zendle for reference to using fiber optic cables and fiber optic interfaces to couple an indoor subscriber subsystem unit to an outdoor subscriber subsystem unit**). Using fiber

optic interfaces and fiber optic links to couple subscriber subsystems has the advantage of reducing signal loss between subscriber subsystems such that they may be more flexible positioned (**See column 10 lines 28-41 of Zendle for reference to this advantage**).

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Zendle, to combine using fiber optic interfaces and fiber optic links to couple subscriber subsystems, as suggested by Zendle, with the system and method of Daniel et al., with the motivation being to reduce signal loss between subscriber subsystems such that they may be more flexible positioned.

9. Claims 11, 12, 13, 28-32, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al.

With respect to claim 11, although Daniel et al. does not specifically disclose the second subsystem comprising a frequency converter for conversion between an intermediate frequency and a radio frequency, up-converting from a base-band frequency, as data is received on serial interface 21 through link 15 (See the abstract of Daniel et al.), to an intermediate frequency, and then from an intermediate frequency to a radio frequency is old and well known in the art of communications and would have been obvious to one of ordinary skill in the art at the time of the invention. Using a frequency converter for conversion between an intermediate frequency and a radio

frequency has the advantage of providing a more interference tolerant means to convert between a base band signal and a radio frequency signal.

With respect to claim 12, although Daniel et al. does not specifically disclose the second subsystem comprising at least one amplifier, using a power amplifier in a radio transceiver is old and well known in the art of communications and would have been obvious to one of ordinary skill in the art at the time of the invention. Using an amplifier has the advantage of increasing the signal strength of a radio signal such that it may be received at a greater distance with increased accuracy.

With respect to claim 13, although Daniel et al. does disclose CTRU 3, which is similar to STRU 14, having a digital multiplexer (**See column 3 lines 36-52 and Figure 1 of Daniel et al. for reference to CTRU 3 having a multiple access CDMA modem, which is a type of digital multiplexer**), Daniel et al. does not specifically disclose the second subsystem comprising a digital multiplexer. It would have been obvious for one of ordinary skill in the art at the time of the invention to use a digital multiplexer such that multiple input data streams can be transmitted simultaneously using a CDMA modem.

With respect to claims 28-31, although Daniel et al. does not specifically disclose using multi-port data routing and multi-port data switching, these functionalities are old and well known in the art of communications and would have been obvious to one of ordinary skill in the art at the time of the invention. Using multi-port data routing and multi-port data switching has the advantage of allowing multiple data links to be connected from one device to many other devices using the same network interface.

With respect to claim 32, although Daniel et al. does not specifically disclose providing broadband interfaces, providing broadband interfaces for a wireless network as well as a wired backhaul network is old and well known in the art of communications and would have been obvious to one of ordinary skill in the art at the time of the invention. Providing broadband interfaces for a wireless network as well as a wired backhaul network has the advantage of providing high-speed data services to users of the system.

With respect to claim 37, although Daniel et al. does disclose coupling the ITS 13 to an ISDN service, Daniel et al. does not specifically disclose that the backbone comprises the Internet. Coupling a subscriber unit to the Internet is old and well known in the art of communications and would have been obvious to one of ordinary skill in the art at the time of the invention. Coupling a subscriber unit to the Internet has the advantage of allowing a subscriber to exchange data over the Internet, which is a widely used digital transmission network.

10. Claims 15-20 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Cam et al. (U.S. Publication US 2002/0126704 A1).

With respect to claims 15, 16, and 47, Daniel et al. does not specifically disclose that the communication of subscriber data via the first and second digital interfaces is synchronous with synchronous overhead added to subscriber data.

With respect to claims 17-20, Daniel et al. does not disclose using SONET, which is a synchronous communication protocol, with training and timing overhead bits added.

With respect to claims 15-20 and 47, Cam et al., in the field of communications, discloses using SONET, which is a synchronous communication protocol, with training and timing overhead bits added (**See page 1 paragraph 10 and page 2 paragraph 16 of Cam et al. for reference to using SONET protocol with training and timing overhead bit patterns**). Using SONET protocol with training and timing overhead bit patterns has the advantage of using a well-known protocol to communicate quickly and efficiently communicate information in a fiber optic link.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cam et al., to combine using SONET protocol with training and timing overhead bit patterns, as suggested by Cam et al., with the system and method of Daniel et al., with the motivation being to use a well-known protocol to communicate quickly and efficiently communicate information in a fiber optic link.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Cam et al. and in further view of Barsheshet (U.S. Publication US 2003/0043738 A1).

With respect to claim 21, the combination of Daniel et al. and Cam et al. does not disclose using resilient packet ring access protocol.

With respect to claim 21, Barsheshet, in the field of communications, discloses using resilient packet ring access protocol (**See page 1 paragraph 4 for reference to using resilient packet ring access protocol**). Using resilient packet ring access protocol has the advantage of using a high-speed efficient packet communication protocol.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barsheshet, to combine using resilient packet ring access protocol, as suggested by Barsheshet, with the system and method of Daniel et al. and Cam et al., with the motivation being to use a high-speed efficient packet communication protocol.

12. Claims 22, 43, and 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Woodhead et al. (U.S. Pat. 6704579 B2).

With respect to claims 22, 43, and 44, Daniel et al. does not disclose a third subsystem with a third subscriber data interface compatible with the wireless protocol and a third digital interface coupled to the first digital interface to provide communication between the first and third subscriber interfaces

With respect to claims 22, 43, and 44, Woodhead et al., in the field of communications, discloses a wireless communication system including a third subsystem with a third subscriber data interface compatible with a wireless protocol and a third digital interface coupled to a first digital interface to provide communication between the first and third subscriber interfaces (**See column 7 line 55 to column 8**

line 23 and Figure 2 of Woodhead et al. for reference to there being a second outdoor unit 108b having the same structure as a first outdoor unit 108a meaning there is a subscriber data interface compatible with a wireless protocol and a third digital interface coupled to a digital interface of an indoor unit 122a).

Woodhead et al. also discloses multiple subsystems connected directly to a multi-port device a first subsystem using a link (**See column 7 line 55 to column 8 line 23 and Figure 2 of Woodhead et al. for reference multiple outdoor units 108 connected to indoor unit 122 through multiple ports**). Using a third subsystem has the advantage of allowing multiple antenna units to be connected to a single device to provide better radio coverage for a subscriber.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Woodhead et al., to combine using a third subsystem, as suggested by Woodhead et al., with the system and method of Daniel et al., with the motivation being to allow multiple antenna units to be connected to a single device to provide better radio coverage for a subscriber.

13. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Woodhead et al., as applied to claims 22, 43, and 44 above, and in further view of Schilling (U.S. Publication US 2003/0161386 A1).

With respect to claim 23, the combination of Daniel et al. and Woodhead et al. does not disclose that the third subsystem is connected to the first subsystem through the same link that connects the first subsystem and the second subsystem.

With respect to claim 23, Schilling discloses subsystems linked together in a daisy chain (**See page 3 paragraphs 36-40 and Figure 2 of Schilling for reference to base stations and a controller linked together in a daisy-chain**). Using subsystems linked together in a daisy chain has the advantage of allowing the amount of fiber used to connect the system to be reduced since all subsystems do not need to connect to a central subsystem directly.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schilling, to combine using subsystems linked together in a daisy chain, as suggested by Schilling, with the system and method of Daniel et al. and Woodhead et al., with the motivation being to allow the amount of fiber used to connect the system to be reduced since all subsystems do not need to connect to a central subsystem directly.

With respect to claims 24 and 25, Woodhead et al. discloses multiple subsystems connected directly to a multi-port device the first subsystem (**See column 7 line 55 to column 8 line 23 and Figure 2 of Woodhead et al. for reference multiple outdoor units 108 connected to indoor unit 122 through multiple ports**).

With respect to claims 26 and 27, although the combination of Daniel et al., Woodhead et al., and Schilling does not specifically disclose using multi-port data routers and multi-port data switches, these devices are old and well known in the art of communications. Using multi-port data router and multi-port data switches has the advantage of allowing multiple data links to be connected from one device to many other devices using the same network interface.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine using multi-port data router and multi-port data switches with the system and method of Daniel et al., Woodhead et al., and Schilling, with the motivation being to allow multiple data links to be connected from one device to many other devices using the same network interface.

14. Claims 41 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al. in view of Barsheshet.

With respect to claims 41 and 46, Daniel et al. does not disclose using resilient packet ring access protocol.

With respect to claims 41 and 46, Barsheshet, in the field of communications, discloses using resilient packet ring access protocol (**See page 1 paragraph 4 for reference to using resilient packet ring access protocol**). Using resilient packet ring access protocol has the advantage of using a high-speed efficient packet communication protocol.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barsheshet, to combine using resilient packet ring access protocol, as suggested by Barsheshet, with the system and method of Daniel et al., with the motivation being to use a high-speed efficient packet communication protocol.

Response to Arguments

15. Applicant's arguments with respect to claims 1-4, 6-34, 36-47, 62, and 63 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON E. MATTIS whose telephone number is (571)272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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